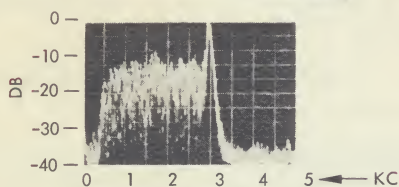
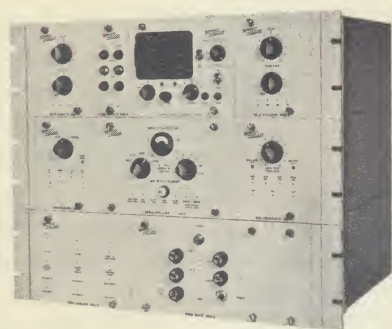


SHORT FORM DATA MODEM CATALOG

Choose From Over 100 Different Models

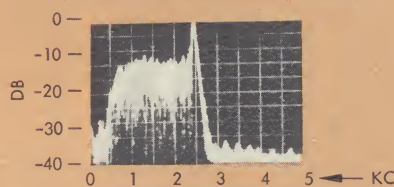
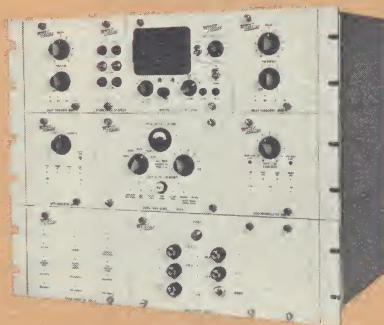
In Making Your Selection Consider..... Bit Rate Requirements and Available Bandwidth

SEBIT-48M 4800 bps



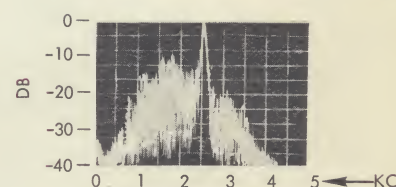
The Sebit-48M output has a bandwidth of 2400 cps with significant spectrum components between 600 cps and 3000 cps.

SEBIT-36M 3600 bps



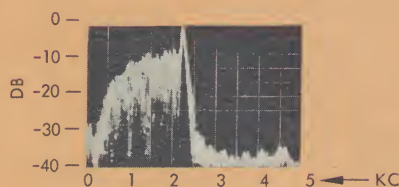
The Sebit-36M output has a bandwidth of 1800 cps with important spectrum components between 700 cps and 2500 cps.

SEBIT-24B 600-1200-2400 bps



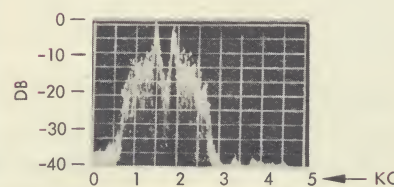
The bandwidth of the Sebit-24B at 2400 bps is 1500 cps with significant spectrum components between 1000 cps and 2500 cps.

SEBIT-24M 2400 bps



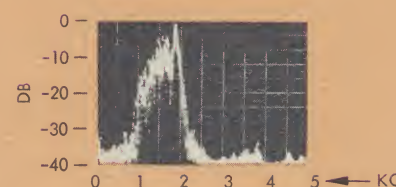
The Sebit-24M output has a bandwidth of 1400 cps; significant spectrum components lie between 900 cps and 2300 cps.

SEBIT-DUAL-12M DUAL 1200 bps



The Sebit-Dual-12M output spectra have a combined bandwidth of 1600 cps; significant spectrum components lie between 850 cps and 2450 cps.

SEBIT-12M 1200 bps



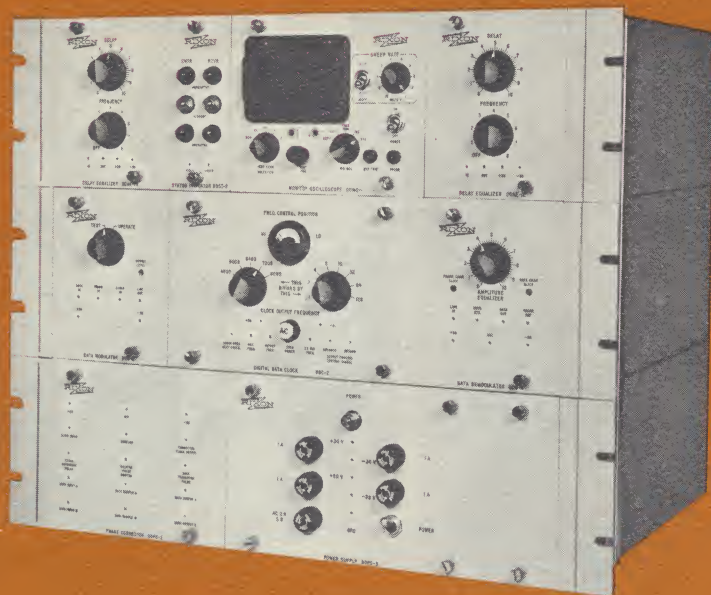
The Sebit-12M output has a bandwidth of 600 cps; significant components lie between 1300 cps and 1900 cps.

3600 BPS / 4800 BPS

OPERATING LOG

Hours / Month: 51,000

Total To Date: 726,400



SEBIT-36M
SEBIT-48M

SEBIT-36M

Handles Data At Rates Up To And Including 3600 BPS Over Schedule 4B Lines

Output Spectrum Is Within The Controlled Passband Of Any Schedule 4B Line

SEBIT-48M

Handles Data At Rates Up To And Including 4800 BPS Over Schedule 4C Lines

Output Spectrum Is Within The Controlled Passband Of Any Schedule 4C Line

BOTH SERIES

Vestigial Sideband Techniques Produce An Output Spectrum Containing Two Data Bits For Every Cycle Of Bandwidth (as shown on cover)

High Modulation Index Made Practical By Carrier Reinjection Provides Improved Performance In The Presence Of Noise And Delay Distortion

Mid-Bit Sampling Is Used To Regenerate A Fixed Amplitude NRZ Output Completely Free From Axis Crossing Jitter

Receiver Clock Is Slaved To Incoming Data In Both Phase And Frequency

Local And Remote Clocks Will Remain Slaved During Long Data Interruptions.

Equalizer Modules Provide A Simple But Effective Method Of Compensating For Delay Distortion Introduced By The Line

Delay Adjustments Can Be Made In Less Than 5 Minutes By Untrained Operators

Modular Construction Enables Models To Be Tailored To The Requirements Of Any System

SPECIFICATION

DATA RATES

Sebit-36M: Up to 3600 bps. Sebit-48M: Up to 4800 bps.

DATA INPUT*

Impedance: 5000 ohms.

Amplitude: -3 to -20V Mark/Space, +3 to +20V S/M

CARRIER FREQUENCIES**

Sebit-36M: 2500 cps. Sebit-48M: 3000 cps.

PERFORMANCE

Bit Rate	Error Rate	Signal-to-Noise	Required Line
2400 bps	1 in 10^5	15 db	Schedule 4A
3600 bps	1 in 10^5	19 db	Schedule 4B
4800 bps	1 in 10^5	20 db	Schedule 4C

DATA OUTPUT*

Source Impedance: 600 ohm min. Amplitude Into A 3000-Ohm Load: -5V Mark/Space + 5V Space/Mark.

CLOCK OUTPUT*

Waveform: Symmetrical ($\pm 2\%$) square wave.

Amplitude: -5V Mark/Space, +5V Space/Mark (3K Load)

Source Impedance: 600 Ohms.

* All Input/Output Circuits Are In Accordance With EIA Standards RS-232-A And Are Available As A Customer Option In Accordance With Mil-Std-188B.

** Other Carrier Frequencies Are Available, On Request To Meet Special Bandwidth Problems.

2400 BPS

OPERATING LOG

Hours / Month : 125,000

Total To Date : 3,414,400



SEBIT-24B



SEBIT-24M

SEBIT-24B

Handles Data At Rates Of 600, 1200, and 2400 BPS.
Over 4A Lines

Reliable - - MTBF Approaching One Year

Error Free Performance

Stable Clocking Sources Prevent Long Line Interruptions From Destroying Synchronization

Modular Plug-in, Printed Circuit Assemblies Reduce Down Time And Simplify Maintenance Procedures

SEBIT-24M

Handles Data Rates Up To And Including 2400 BPS
Over Schedule 4A Lines

Vestigial Sideband Techniques Produce An Output Spectrum Containing Two Data Bits For Every Cycle Of Bandwidth. Spectrum Width 1400 CPS

Modular Construction Enables Models To Be Tailored To The Exact Requirements Of Any System

Clock Oscillator Stability of $1 \text{ In } 10^7$ Per Day Assures Interrupt Time Of At Least 5 Minutes Without Frequency Correction

No Maintenance Adjustments Or Alignment Procedures

APPLICATIONS

Sebit data modems are presently being used in all types of real-time, on-line data systems operating at data rates from 150 bits per second to 4800 bps over voice frequency channels. These Sebits have been selected for a large number of the secure data systems being operated under the supervision of Government Agencies.

SPECIFICATION

SEBIT - 24B SPECIFICATIONS

DATA RATES

600, 1200, And 2400 BPS
(500 To 2500 BPS With External Clock).

DATA INPUT*

Impedance: Greater Than 5000 Ohms
Amplitude: +3V To +50V Mark/Space
-30V To +0.5V Space/Mark

CARRIER FREQUENCIES

2500 CPS, 2200 CPS, or 1600 CPS

PERFORMANCE

Error Rate: $1 \text{ In } 10^5$ With S/N Ratio of 18 DB.

DATA OUTPUT*

Source Impedance: 600 Ohms
Amplitude: +5V Mark/Space; 0V Space/Mark.

CLOCK OUTPUTS

Impedance: 600 Ohms
Amplitude: 5V Peak-To-Peak Square Wave

SEBIT-24M SPECIFICATIONS

DATA RATES

Up To And Including 2400 BPS.

DATA INPUTS

Impedance: 5000 Ohms
Amplitude: +3V To +20V Mark/Space
-3V To -20V Space/Mark

CARRIER FREQUENCY

2300 CPS

PERFORMANCE

Error Rate: $1 \text{ In } 10^5$ With S/N Ratio of 15 DB.

DATA OUTPUTS

Output Impedance: 600 Ohms
Amplitude: +5V $\pm$ 0.5V Mark/Space
-5V $\pm$ 0.5V Space/Mark

CLOCK OUTPUTS

Impedance: 600 Ohms
Amplitude: 5V $\pm$ 0.5V Polar Into 3000 Ohms

1200 BPS

OPERATING LOG
NEW

SEBIT-12M

Handles Data Up To 1200 BPS Over Schedule 4 Lines

High Quality Performance At An Economical Cost

No Maintenance Adjustments

Clock Oscillator Stability of $1 \text{ In } 10^7$ Per Day Assures Interrupt Time Of At Least 5 Minutes Without Frequency Correction

Output Signal Contains 2 Data Bits Per Cycle Of Bandwidth. Spectrum Width 600 CPS

No Delay Equalization Required For Operation Over A Schedule 4A Line

SEBIT-DUAL-12M

Reduces The Number Of Data Lines To One Half The Number Normally Required

Enables Two Completely Independent 1200 BPS Data Streams To Be Handled By One Schedule 4A Line

Increases Modem Flexibility

Reduces Data Message Costs

No Maintenance Adjustments Or Alignment Procedures

Each Channel Is Capable Of Operating Synchronously Or Asynchronously At Any Bit Rate To 1200 BPS.

FCC REGULATIONS

All Sebits Comply With "General Regulations FCC No.134," Governing Customer Owned Devices For Use In Conjunction With Facilities Furnished By The Telephone Company, And "Channels For Data Transmissions FCC No. 237."

SEBIT-12M

SEBIT-DUAL-12M

SPECIFICATION

DATA RATES

Up To 1200 BPS (Data Rate Of Each Sebit-Dual-12M Channel Is Independent).

DATA INPUT*

Impedance: 5000 Ohms
Amplitude: +3 To +20V Mark/Space
-3 To -20V Space/Mark

CARRIER FREQUENCIES

Sebit-12M: 1900 CPS
Sebit-Dual-12M: Upper Channel: 1850 CPS
Lower Channel: 1450 CPS

PERFORMANCE:

Sebit-12M: Error Rate Less Than $1 \text{ In } 10^5$ With A 12 DB Signal-To-Noise Ratio.

Sebit-Dual-12M: Error Rate Less Than $1 \text{ In } 10^5$ With A 16 DB Signal-To-Noise Ratio.

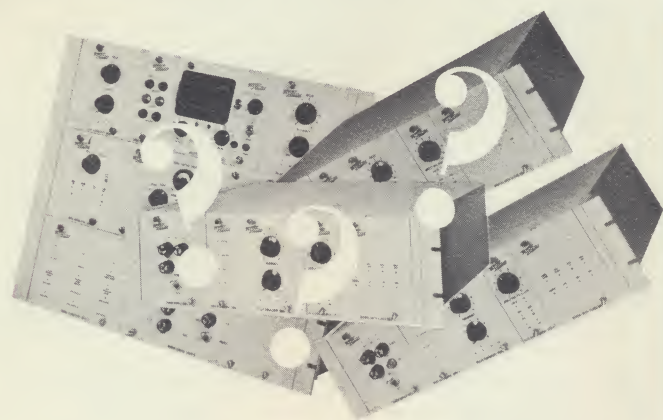
DATA OUTPUT*

Impedance: 600 Ohms
Amplitude: +5V $\pm$ 0.5V Mark/Space
-5V $\pm$ 0.5V Space/Mark

CLOCK OUTPUT

Impedance: 600 Ohms
Amplitude: +5V $\pm$ 0.5V Polar Into 3000 Ohms

How to Select A Data Modem



Rixon offers more than 100 off-the-shelf data modems; one of them is or can be tailored to the exact requirements of your system applications.

During the conception of a data system, the three basic considerations which dictate the selection of a specific data modem are: 1) maximum bit rate, 2) available data channel bandwidth, and 3) the type of clocking system required. After the maximum bit rate has been determined, the following table can be used to determine both the Rixon Sebit series and the type of voice frequency circuit which should be used. Where the availability of the data channel is the restricting factor, this table can be used to determine the maximum bit rate and Sebit series that are compatible with the available bandwidth.

Once the data modem and voice frequency circuit have been selected, the next requirement is the clocking system. Since the degree of clocking required is dependent upon the system design and applications, it is best to consult Rixon's Applications Engineering Group before making a final decision regarding the clocking system.

DATA RATE	RECOMMENDED SEBIT SERIES	*VOICE FREQUENCY CIRCUIT REQUIRED
1200 bps or slower	SEBIT - 12M SEBIT - 24B SEBIT - 24M SEBIT - 36M	4
Two Separate 1200 bps, or Slower, Data Streams	SEBIT - DUAL - 12M	4A
2400 bps or slower	SEBIT - 24B SEBIT - 24M SEBIT - 36M	4A
3600 bps or slower	SEBIT - 36M SEBIT - 48M	4B 4C
4800 bps or slower	SEBIT - 48M	4C

*These schedule 4, 4A, 4B, and 4C lines are controlled by FCC Tariff No. 237. Characteristics of these lines are available on request.

List of DD Modules

Rixon's DD - Modules which are used in data system applications, and the Product Bulletins which contain detailed information and specifications for these modules are listed in the following table.

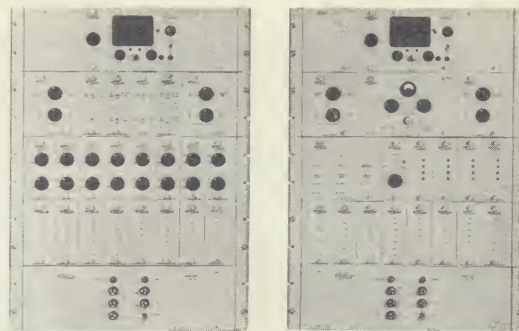
Nomenclature	Description	Used With	Product Bulletin
DDAD-1	Analog Demodulator	Analog Modem	933-1029
DDAE-1	Delay Equalizer	Sebit-36M, Sebit-48M	933-1027
DDAE-2	Delay Equalizer	Sebit-Dual-12M	933-1027
DDAE-3	Delay Equalizer	Sebit-12M, Sebit-24M	933-1027
DDAE-4	Delay Equalizer	DD4007 Telephone Line Equalizer	933-1079
DDAM-1	Analog Modulator	Analog Modem	933-1029
DDC-1	Clock, Master (Transmit)	All	933-1045
DDC-2	Clock, Slave (Receive)	All	933-1030
DDC-3	Clock, 60 cps	Clock Standard MC-879	933-1053
DDC-4	Clock, Slave	DD1001 Sepath/Teletype	933-1049
DDC-8	Clock, Continuous Data	All	933-1063
DDC-9	Clock, Short Interrupt - 2400 cps	Sebit-24M	933-1068
DDC-9A	Clock, Short Interrupt 300, 600, 1200, 2400	Sebit-12M, Sebit-24M	933-1068
DDC-9B	Clock, Short-Interrupt - 3600 cps	Sebit-36M	933-1068
DDC-11	Clock, Short-Interrupt - 1200 cps	Sebit-12M, Sebit-Dual-12M	933-1068
DDC-11A	Clock, Short-Interrupt 150, 300, 600, 1200 bps, and 2400 bps	Sebit-12M, Sebit-Dual-12M, Sebit-24M	933-1068
DDCC-1	Code Converter (Asynchronous to Synchronous)	DD1001 Sepath/Teletype	933-1049
DDCC-2	Code Converter (Synchronous to Asynchronous)	DD1001 Sepath/Teletype	933-1049
DDCC-5	Code Converter (Asynchronous to Synchronous)	DD1001 Sepath/Teletype DD3005 Time Division Multiplexer	933-1049 933-1048
DDCC-6	Code Converter (Synchronous to Asynchronous)	DD1001 Sepath/Teletype DD3005 Time Division Multiplexer	933-1049 933-1048
DDD-1	Demodulator, 2400 bps	Sebit-24M	933-1066
DDD-2	Demodulator, 3600 bps	Sebit-36M	933-1033
DDD-3	Demodulator, 4800 bps	Sebit-48M	933-1054
DDD-5L	Demodulator, Lower Spectrum	Sebit-Dual-12M	933-1075
DDD-5U	Demodulator, Upper Spectrum	Sebit-Dual-12M	933-1075
DDD-6	Demodulator, 1200 bps	Sebit-12M	933-1070
DDDE-1	Delay Equalizer - Time Delay	Sepath - Sepath/Teletype	933-1041
DDFD-1	Frame Detector	Time Division Multiplexer	933-1046
DDFG-1	Frame Generator	Time Division Multiplexer	933-1047
DDM-1	Modulator, 2400 bps	Sebit-24M	933-1066
DDM-2	Modulator, 3600 bps	Sebit-36M	933-1032
DDM-3	Modulator, 4800 bps	Sebit-48M	933-1055
DDM-5L	Modulator, 1200 bps Lower Spectrum	Sebit-Dual-12M	933-1075
DDM-5U	Modulator, 1200 bps Upper Spectrum	Sebit-Dual-12M	933-1075
DDM-6	Modulator, 1200 bps	Sebit-12M	933-1070
DDMO-1	Monitor Oscilloscope	All	933-1035
DDPC-2	Phase Corrector	Sebit-36M, Sebit-48M	933-1031
DDPS-1	Power Supply	All	933-1044
DDPS-1A	Power Supply	All	933-1044
DDPS-2	Power Supply	All	933-1044
DDPS-3	Power Supply	All	933-1044
DDPS-3A	Power Supply	All	933-1044
DDPS-4	Power Supply	All	933-1044
DDPS-5	Power Supply	All	933-1044
DDPS-5A	Power Supply	All	933-1044
DDPS-6	Power Supply	All	933-1044
DDPS-7	Power Supply	All	933-1044
DDPS-8	Power Supply	All	933-1044
DDPS-9	Power Supply	All	933-1044
DDPS-10	Power Supply	All	933-1044
DDPS-11	Power Supply	All	933-1044
DDPS-12	Power Supply	All	933-1044
DDSC-1	Signal Concentrator	Sepath-Sepath/Teletype	933-1038
DDSD-1	Signal Distributor	Sepath-Sepath/Teletype	933-1037
DDSI-1	Status Indicator	Sepath	933-1040
DDSI-2	Status Indicator	Sebits	933-1034
DDSI-3	Status Indicator	Sebits	933-1034
DDSU-1	Supervisory Unit	Sebits	933-1060
DDTG-1	Timing Generator	Sepath/Teletype - Sepath	933-1039

For Technical Assistance In Selecting The Correct Data Modem Or Designing Your Data System - Contact Our Applications Engineers (301)-622-2121 Ext. 208, 210, and 211.

ASSOCIATED RIXON DATA EQUIPMENT...

SEPATH/TELETYPE BULK ENCRYPTION SYSTEM DD1001

These data terminals have recently been installed on the Atlantic Missile Range and are presently operational. Their success has been evidenced by a recent procurement of additional production quantities. Employment of this equipment results in a 16 channel secure teletype link being processed by a single encryption device. The unit has been tested and accepted in accordance with NAG 1A/TSEC and DCA-ESNP/422-5B.

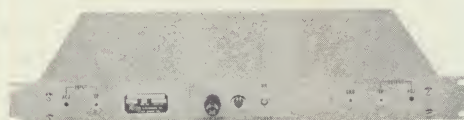


DATA MESSAGE COMPOSER



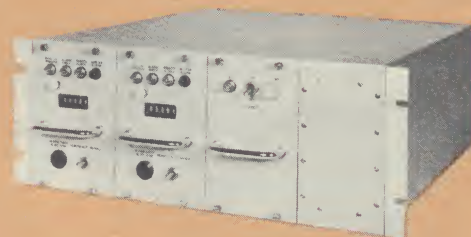
The Rixon Data Message Composer is a simple electro-mechanical device for composing and transmitting standard format teletype messages to automated accounting, inventory control, and other data storage and retrieval systems.

ADFAX FACSIMILE ADAPTER



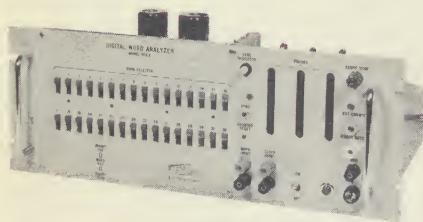
The ADFAX Facsimile Adapter is used with Rixon Sebitts and other data modems to permit secure transmission over 3-kc voice wirelines using standard facsimile equipment. Facsimile can be easily transmitted over a digital system where two-level (black and white) information is sufficient for the data to be interpreted. The ADFAX uses a two-level, analog-to-digital conversion technique.

CONTROL UNIT



The Rixon CCU-431 Control Unit has been designed to automatically maintain synchronization on a full-duplex data communications link employing on-line security equipment. The unit provides automatic alarm checking and resynchronization when required. These units meet Fed-Std-222 and are easily converted to meet the requirements of Mil-Std-188B. Other features include a manual synchronization mode, alarm checking, and local and remote status indications.

DIGITAL WORD GENERATOR DIGITAL WORD ANALYZER



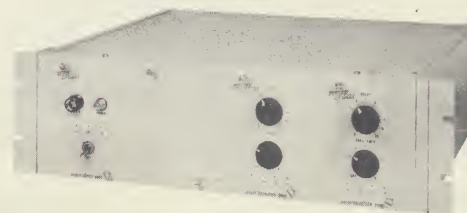
These Word Generators and Analyzers provide a convenient means for generating a repetitive digital word and then analyzing this word after transmission by the data systems for degradations. A word of any length and binary combination up to 32 bits can be implemented by these units.

DIGITAL ISOLATION AMPLIFIER



This Digital Isolation Amplifier provides both ac and dc isolation from signals in the reverse direction while providing dc to 100 kc coupling of signals in the forward direction. This amplifier is especially effective where it is necessary to isolate data or clocking signals within a secure transmission system.

TELEPHONE LINE DELAY EQUALIZER DD4002



This Telephone Line Delay Equalizer is used to compensate for the differential delay of voice communications circuits to make them suitable for digital data transmission. Thus, this equalizer is used to cancel the natural distortion of the communications facility. These equalizers are available in many different combinations to provide a wide range of delay curves.

RIXON ELECTRONICS, INC.

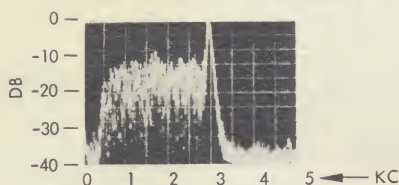
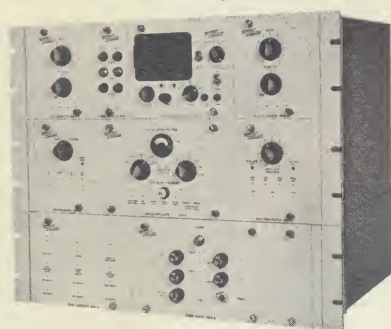
2121 INDUSTRIAL PARKWAY—MONTGOMERY INDUSTRIAL PARK—SILVER SPRING, MARYLAND

SHORT FORM DATA MODEM CATALOG

Choose From Over 100 Different Models

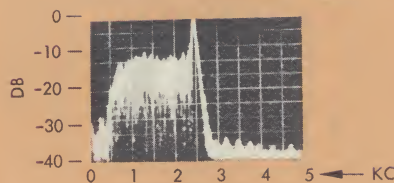
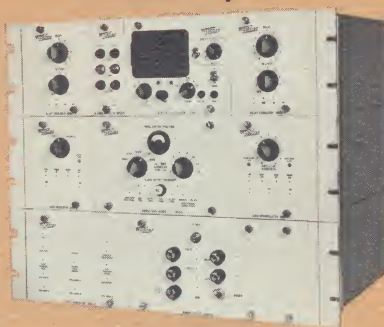
In Making Your Selection Consider..... Bit Rate Requirements and Available Bandwidth

SEBIT-48M 4800 bps



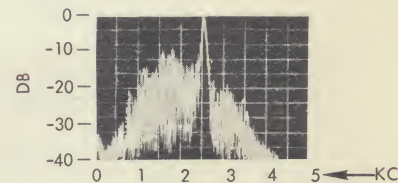
The Sebit-48M output has a bandwidth of 2400 cps with significant spectrum components between 600 cps and 3000 cps.

SEBIT-36M 3600 bps



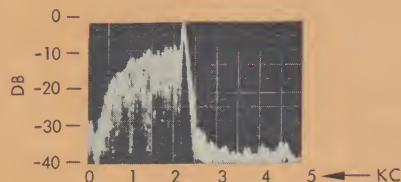
The Sebit-36M output has a bandwidth of 1800 cps with important spectrum components between 700 cps and 2500 cps.

SEBIT-24B 600-1200-2400 bps



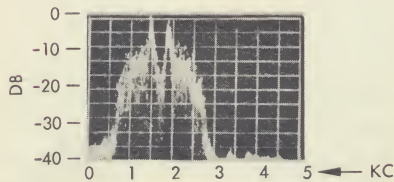
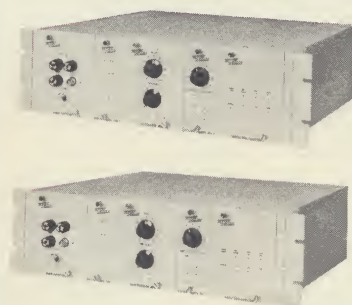
The bandwidth of the Sebit-24B at 2400 bps is 1500 cps with significant spectrum components between 1000 cps and 2500 cps.

SEBIT-24M 2400 bps



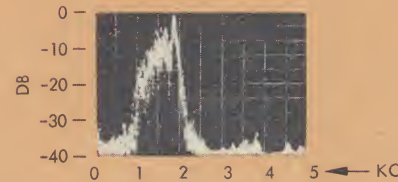
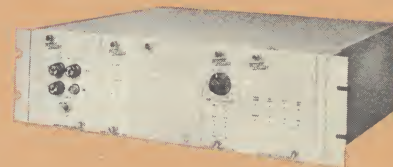
The Sebit-24M output has a bandwidth of 1400 cps; significant spectrum components lie between 900 cps and 2300 cps.

SEBIT-DUAL-12M DUAL 1200 bps



The Sebit-Dual-12M output spectra have a combined bandwidth of 1600 cps; significant spectrum components lie between 850 cps and 2450 cps.

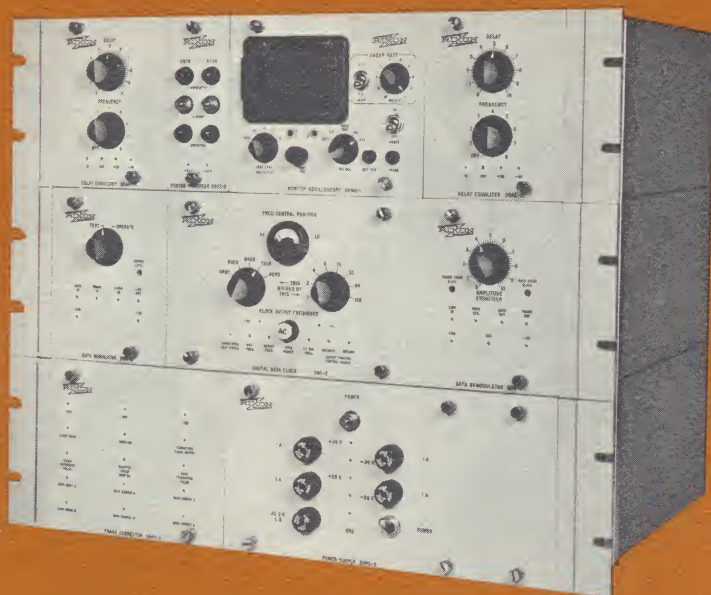
SEBIT-12M 1200 bps



The Sebit-12M output has a bandwidth of 600 cps; significant components lie between 1300 cps and 1900 cps.

3600 BPS / 4800 BPS

OPERATING LOG
Hours / Month: 51,000
Total To Date: 726,400



SEBIT-36M
SEBIT-48M

SEBIT-36M

Handles Data At Rates Up To And Including 3600 BPS Over Schedule 4B Lines

Output Spectrum Is Within The Controlled Passband Of Any Schedule 4B Line

SEBIT-48M

Handles Data At Rates Up To And Including 4800 BPS Over Schedule 4C Lines

Output Spectrum Is Within The Controlled Passband Of Any Schedule 4C Line

BOTH SERIES

Vestigial Sideband Techniques Produce An Output Spectrum Containing Two Data Bits For Every Cycle Of Bandwidth (as shown on cover)

High Modulation Index Made Practical By Carrier Reinjection Provides Improved Performance In The Presence Of Noise And Delay Distortion

Mid-Bit Sampling Is Used To Regenerate A Fixed Amplitude NRZ Output Completely Free From Axis Crossing Jitter

Receiver Clock Is Slaved To Incoming Data In Both Phase And Frequency

Local And Remote Clocks Will Remain Slaved During Long Data Interruptions.

Equalizer Modules Provide A Simple But Effective Method Of Compensating For Delay Distortion Introduced By The Line

Delay Adjustments Can Be Made In Less Than 5 Minutes By Untrained Operators

Modular Construction Enables Models To Be Tailored To The Requirements Of Any System

SPECIFICATION

DATA RATES

Sebit-36M: Up to 3600 bps. Sebit-48M: Up to 4800 bps.

DATA INPUT*

Impedance: 5000 ohms.

Amplitude: -3 to -20V Mark/Space, +3 to +20V S/M

CARRIER FREQUENCIES**

Sebit-36M: 2500 cps. Sebit-48M: 3000 cps.

PERFORMANCE

Bit Rate	Error Rate	Signal-to-Noise	Required Line
2400 bps	1 in 10^5	15 db	Schedule 4A
3600 bps	1 in 10^5	19 db	Schedule 4B
4800 bps	1 in 10^5	20 db	Schedule 4C

DATA OUTPUT*

Source Impedance: 600 ohm min. Amplitude Into A 3000-Ohm Load: -5V Mark/Space + 5V Space/Mark.

CLOCK OUTPUT*

Waveform: Symmetrical ($\pm 2\%$) square wave.

Amplitude: -5V Mark/Space, +5V Space/Mark (3K Load)

Source Impedance: 600 Ohms.

* All Input/Output Circuits Are In Accordance With EIA Standards RS-232-A And Are Available As A Customer Option In Accordance With Mil-Std-188B.

** Other Carrier Frequencies Are Available, On Request To Meet Special Bandwidth Problems.

2400 BPS

OPERATING LOG

Hours/Month: 125,000

Total To Date: 3,414,400



SEBIT-24B



SEBIT-24M

SEBIT-24B

Handles Data At Rates Of 600, 1200, and 2400 BPS.
Over 4A Lines

Reliable - - MTBF Approaching One Year

Error Free Performance

Stable Clocking Sources Prevent Long Line Interruptions From Destroying Synchronization

Modular Plug-in, Printed Circuit Assemblies Reduce Down Time And Simplify Maintenance Procedures

SEBIT-24M

Handles Data Rates Up To And Including 2400 BPS
Over Schedule 4A Lines

Vestigial Sideband Techniques Produce An Output Spectrum Containing Two Data Bits For Every Cycle Of Bandwidth. Spectrum Width 1400 CPS

Modular Construction Enables Models To Be Tailored To The Exact Requirements Of Any System

Clock Oscillator Stability of $1 \text{ In } 10^7$ Per Day Assures Interrupt Time Of At Least 5 Minutes Without Frequency Correction

No Maintenance Adjustments Or Alignment Procedures

APPLICATIONS

Sebit data modems are presently being used in all types of real-time, on-line data systems operating at data rates from 150 bits per second to 4800 bps over voice frequency channels. These Sebits have been selected for a large number of the secure data systems being operated under the supervision of Government Agencies.

SPECIFICATION

SEBIT - 24B SPECIFICATIONS

DATA RATES

600, 1200, And 2400 BPS
(500 To 2500 BPS With External Clock).

DATA INPUT*

Impedance: Greater Than 5000 Ohms
Amplitude: +3V To +50V Mark/Space
-30V To +0.5V Space/Mark

CARRIER FREQUENCIES

2500 CPS, 2200 CPS, or 1600 CPS

PERFORMANCE

Error Rate: $1 \text{ In } 10^5$ With S/N Ratio of 18 DB.

DATA OUTPUT*

Source Impedance: 600 Ohms
Amplitude: +5V Mark/Space; 0V Space/Mark.

CLOCK OUTPUTS

Impedance: 600 Ohms
Amplitude: 5V Peak-To-Peak Square Wave

SEBIT-24M SPECIFICATIONS

DATA RATES

Up To And Including 2400 BPS.

DATA INPUTS

Impedance: 5000 Ohms
Amplitude: +3V To +20V Mark/Space
-3V To -20V Space/Mark

CARRIER FREQUENCY

2300 CPS

PERFORMANCE

Error Rate: $1 \text{ In } 10^5$ With S/N Ratio of 15 DB.

DATA OUTPUTS

Output Impedance: 600 Ohms
Amplitude: +5V $\pm$ 0.5V Mark/Space
-5V $\pm$ 0.5V Space/Mark

CLOCK OUTPUTS

Impedance: 600 Ohms
Amplitude: 5V $\pm$ 0.5V Polar Into 3000 Ohms

1200 BPS

OPERATING LOG
NEW

SEBIT-12M

Handles Data Up To 1200 BPS Over Schedule 4 Lines

High Quality Performance At An Economical Cost

No Maintenance Adjustments

Clock Oscillator Stability of $1 \text{ In } 10^7$ Per Day Assures Interrupt Time Of At Least 5 Minutes Without Frequency Correction

Output Signal Contains 2 Data Bits Per Cycle Of Bandwidth. Spectrum Width 600 CPS

No Delay Equalization Required For Operation Over A Schedule 4A Line

SEBIT-DUAL-12M

Reduces The Number Of Data Lines To One Half The Number Normally Required

Enables Two Completely Independent 1200 BPS Data Streams To Be Handled By One Schedule 4A Line

Increases Modem Flexibility

Reduces Data Message Costs

No Maintenance Adjustments Or Alignment Procedures

Each Channel Is Capable Of Operating Synchronously Or Asynchronously At Any Bit Rate To 1200 BPS.

FCC REGULATIONS

All Sebits Comply With "General Regulations FCC No.134," Governing Customer Owned Devices For Use In Conjunction With Facilities Furnished By The Telephone Company, And "Channels For Data Transmissions FCC No. 237."

SEBIT-12M

SEBIT-DUAL-12M

SPECIFICATION

DATA RATES

Up To 1200 BPS (Data Rate Of Each Sebit-Dual-12M Channel Is Independent).

DATA INPUT*

Impedance: 5000 Ohms
Amplitude: +3 To +20V Mark/Space
-3 To -20V Space/Mark

CARRIER FREQUENCIES

Sebit-12M: 1900 CPS
Sebit-Dual-12M: Upper Channel: 1850 CPS
Lower Channel: 1450 CPS

PERFORMANCE:

Sebit-12M: Error Rate Less Than $1 \text{ In } 10^5$ With A 12 DB Signal-To-Noise Ratio.

Sebit-Dual-12M: Error Rate Less Than $1 \text{ In } 10^5$ With A 16 DB Signal-To-Noise Ratio.

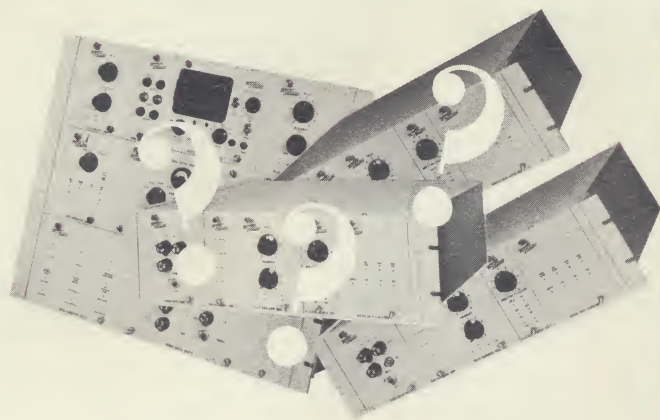
DATA OUTPUT*

Impedance: 600 Ohms
Amplitude: $+5V \pm 0.5V$ Mark/Space
 $-5V \pm 0.5V$ Space/Mark

CLOCK OUTPUT

Impedance: 600 Ohms
Amplitude: $+5V \pm 0.5V$ Polar Into 3000 Ohms

How to Select A Data Modem



Rixon offers more than 100 off-the-shelf data modems; one of them is or can be tailored to the exact requirements of your system applications.

During the conception of a data system, the three basic considerations which dictate the selection of a specific data modem are: 1) maximum bit rate, 2) available data channel bandwidth, and 3) the type of clocking system required. After the maximum bit rate has been determined, the following table can be used to determine both the Rixon Sebit series and the type of voice frequency circuit which should be used. Where the availability of the data channel is the restricting factor, this table can be used to determine the maximum bit rate and Sebit series that are compatible with the available bandwidth.

Once the data modem and voice frequency circuit have been selected, the next requirement is the clocking system. Since the degree of clocking required is dependent upon the system design and applications, it is best to consult Rixon's Applications Engineering Group before making a final decision regarding the clocking system.

DATA RATE	RECOMMENDED SEBIT SERIES	*VOICE FREQUENCY CIRCUIT REQUIRED
1200 bps or slower	SEBIT - 12M SEBIT - 24B SEBIT - 24M SEBIT - 36M	4
Two Separate 1200 bps, or Slower, Data Streams	SEBIT - DUAL - 12M	4A
2400 bps or slower	SEBIT - 24B SEBIT - 24M SEBIT - 36M	4A
3600 bps or slower	SEBIT - 36M SEBIT - 48M	4B 4C
4800 bps or slower	SEBIT - 48M	4C

*These schedule 4, 4A, 4B, and 4C lines are controlled by FCC Tariff No. 237. Characteristics of these lines are available on request.

List of DD Modules

Rixon's DD-Modules which are used in data system applications, and the Product Bulletins which contain detailed information and specifications for these modules are listed in the following table.

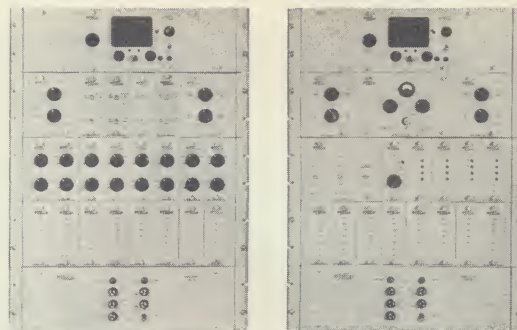
Nomenclature	Description	Used With	Product Bulletin
DDAD-1	Analog Demodulator	Analog Modem	933-1029
DDAE-1	Delay Equalizer	Sebit-36M, Sebit-48M	933-1027
DDAE-2	Delay Equalizer	Sebit-Dual-12M	933-1027
DDAE-3	Delay Equalizer	Sebit-12M, Sebit-24M	933-1027
DDAE-4	Delay Equalizer	DD4007 Telephone Line Equalizer	933-1079
DDAM-1	Analog Modulator	Analog Modem	933-1029
DDC-1	Clock, Master (Transmit)	All	933-1045
DDC-2	Clock, Slave (Receive)	All	933-1030
DDC-3	Clock, 60 cps	Clock Standard MC-879	933-1053
DDC-4	Clock, Slave	DD1001 Sepath/Teletype	933-1049
DDC-8	Clock, Continuous Data	All	933-1063
DDC-9	Clock, Short Interrupt - 2400 cps	Sebit-24M	933-1068
DDC-9A	Clock, Short Interrupt 300, 600, 1200, 2400	Sebit-12M, Sebit-24M	933-1068
DDC-9B	Clock, Short-Interrupt - 3600 cps	Sebit-36M	933-1068
DDC-11	Clock, Short-Interrupt - 1200 cps	Sebit-12M, Sebit-Dual-12M	933-1068
DDC-11A	Clock, Short-Interrupt 150, 300, 600, 1200 bps, and 2400 bps	Sebit-12M, Sebit-Dual-12M Sebit-24M	933-1068
DDCC-1	Code Converter (Asynchronous to Synchronous)	DD1001 Sepath/Teletype	933-1049
DDCC-2	Code Converter (Synchronous to Asynchronous)	DD1001 Sepath/Teletype	933-1049
DDCC-5	Code Converter (Asynchronous to Synchronous)	DD1001 Sepath/Teletype DD3005 Time Division Multiplexer	933-1049 933-1048
DDCC-6	Code Converter (Synchronous to Asynchronous)	DD1001 Sepath/Teletype DD3005 Time Division Multiplexer	933-1049 933-1048
DDD-1	Demodulator, 2400 bps	Sebit-24M	933-1066
DDD-2	Demodulator, 3600 bps	Sebit-36M	933-1033
DDD-3	Demodulator, 4800 bps	Sebit-48M	933-1054
DDD-5L	Demodulator, Lower Spectrum	Sebit-Dual-12M	933-1075
DDD-5U	Demodulator, Upper Spectrum	Sebit-Dual-12M	933-1075
DDD-6	Demodulator, 1200 bps	Sebit-12M	933-1070
DDDE-1	Delay Equalizer - Time Delay	Sepath - Sepath/Teletype	933-1041
DDFD-1	Frame Detector	Time Division Multiplexer	933-1046
DDFG-1	Frame Generator	Time Division Multiplexer	933-1047
DDM-1	Modulator, 2400 bps	Sebit-24M	933-1066
DDM-2	Modulator, 3600 bps	Sebit-36M	933-1032
DDM-3	Modulator, 4800 bps	Sebit-48M	933-1055
DDM-5L	Modulator, 1200 bps Lower Spectrum	Sebit-Dual-12M	933-1075
DDM-5U	Modulator, 1200 bps Upper Spectrum	Sebit-Dual-12M	933-1075
DDM-6	Modulator, 1200 bps	Sebit-12M	933-1070
DDMO-1	Monitor Oscilloscope	All	933-1035
DDPC-2	Phase Corrector	Sebit-36M, Sebit-48M	933-1031
DDPS-1	Power Supply	All	933-1044
DDPS-1A	Power Supply	All	933-1044
DDPS-2	Power Supply	All	933-1044
DDPS-3	Power Supply	All	933-1044
DDPS-3A	Power Supply	All	933-1044
DDPS-4	Power Supply	All	933-1044
DDPS-5	Power Supply	All	933-1044
DDPS-5A	Power Supply	All	933-1044
DDPS-6	Power Supply	All	933-1044
DDPS-7	Power Supply	All	933-1044
DDPS-8	Power Supply	All	933-1044
DDPS-9	Power Supply	All	933-1044
DDPS-10	Power Supply	All	933-1044
DDPS-11	Power Supply	All	933-1044
DDPS-12	Power Supply	All	933-1044
DDSC-1	Signal Concentrator	Sepath-Sepath/Teletype	933-1038
DDSD-1	Signal Distributor	Sepath-Sepath/Teletype	933-1037
DDSI-1	Status Indicator	Sepath	933-1040
DDSI-2	Status Indicator	Sebits	933-1034
DDSI-3	Status Indicator	Sebits	933-1034
DDSU-1	Supervisory Unit	Sebits	933-1060
DDTG-1	Timing Generator	Sepath/Teletype - Sepath	933-1039

For Technical Assistance In Selecting The Correct Data Modem Or Designing Your Data System - Contact Our Applications Engineers (301)-622-2121 Ext. 208, 210, and 211.

ASSOCIATED RIXON DATA EQUIPMENT...

SEPATH/TELETYPE BULK ENCRYPTION SYSTEM DD1001

These data terminals have recently been installed on the Atlantic Missile Range and are presently operational. Their success has been evidenced by a recent procurement of additional production quantities. Employment of this equipment results in a 16 channel secure teletype link being processed by a single encryption device. The unit has been tested and accepted in accordance with NAG 1A/TSEC and DCA-ESNP/422-5B.



DATA MESSAGE COMPOSER



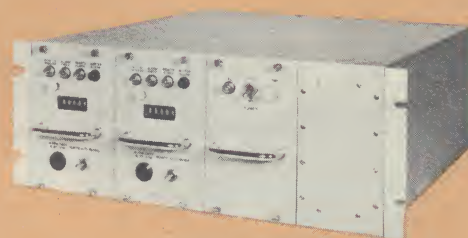
The Rixon Data Message Composer is a simple electro-mechanical device for composing and transmitting standard format teletype messages to automated accounting, inventory control, and other data storage and retrieval systems.

ADFAX FACSIMILE ADAPTER



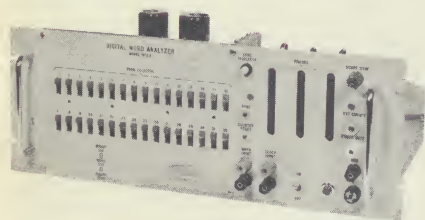
The ADFAX Facsimile Adapter is used with Rixon Sebitts and other data modems to permit secure transmission over 3-kc voice wirelines using standard facsimile equipment. Facsimile can be easily transmitted over a digital system where two-level (black and white) information is sufficient for the data to be interpreted. The ADFAX uses a two-level, analog-to-digital conversion technique.

CONTROL UNIT



The Rixon CCU-431 Control Unit has been designed to automatically maintain synchronization on a full-duplex data communications link employing on-line security equipment. The unit provides automatic alarm checking and resynchronization when required. These units meet Fed-Std-222 and are easily converted to meet the requirements of Mil-Std-188B. Other features include a manual synchronization mode, alarm checking, and local and remote status indications.

DIGITAL WORD GENERATOR DIGITAL WORD ANALYZER



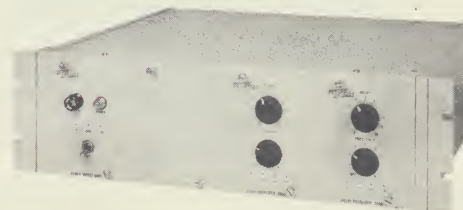
These Word Generators and Analyzers provide a convenient means for generating a repetitive digital word and then analyzing this word after transmission by the data systems for degradations. A word of any length and binary combination up to 32 bits can be implemented by these units.

DIGITAL ISOLATION AMPLIFIER



This Digital Isolation Amplifier provides both ac and dc isolation from signals in the reverse direction while providing dc to 100 kc coupling of signals in the forward direction. This amplifier is especially effective where it is necessary to isolate data or clocking signals within a secure transmission system.

TELEPHONE LINE DELAY EQUALIZER DD4002



This Telephone Line Delay Equalizer is used to compensate for the differential delay of voice communications circuits to make them suitable for digital data transmission. Thus, this equalizer is used to cancel the natural distortion of the communications facility. These equalizers are available in many different combinations to provide a wide range of delay curves.

RIXON ELECTRONICS, INC.

2121 INDUSTRIAL PARKWAY—MONTGOMERY INDUSTRIAL PARK—SILVER SPRING, MARYLAND